UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,050	06/27/2003	Takashi Yamamura	NITT.0144	4137

7590 10/12/2006

Stanley P. Fisher
Reed Smith LLP
Suite 1400
3110 Fairview Park Drive
Falls Church, VA 22042-4503

EXAMINER	
MILLER, MARINA I	

ART UNIT	PAPER NUMBER
1631	

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,050	YAMAMURA ET AL.	
	Examiner	Art Unit	
	Marina Miller	1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) *4-6* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicants' submission filed on 7/11/2006 is acknowledged.

Claims 1-6 are pending.

Claims 4-6 are withdrawn again from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claims. Election was made traverse in the response filed 2/24/2006.

Claims 1-3 presently are under examination.

Priority

The examiner indicated in the previous office action mailed 4/11/2006 that applicant could not rely upon the foreign priority papers to overcome the rejections stated in the office action because a translation of said papers had not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Applicants did not file a translation of Japan 2002-188932 application. Therefore, the examiner maintains that the foreign priority papers cannot be relied upon to overcome the rejections of record.

Claim Rejections - 35 USC § 112

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 1, as amended, recites the limitation "using a database ... to evaluate." The limitation makes claim 1 vague and indefinite because it is not clear what specific manner or

steps of "using" a database are intended. As the intended limitation is not clear, claims 1-4 are indefinite.

Claim 1, as amended, recites in the preamble "[a]n efficacy evaluation method." The claim further recites steps of labeling, mixing and hybridizing, detecting fluorescence to determine the expression levels, and using a database to evaluate the efficacy. It is not clear whether the limitation "to evaluate" is intended to be an active, positive method step, or merely an intended use of the method. If the latter, then none of the steps is actually directed to evaluating efficacy, and therefore it is not clear if the preamble is intended to limit the method and what relationship is intended between the preamble and the method steps. As the intended limitation is not clear, claims 1-3 are indefinite.

Claim 1, as amended, recites the limitation "different probes corresponding to at least one interferon induced protein gene, at least one interferon regulation factor gene, and at least one chemokine gene." It is not clear whether a different probe "corresponds" to all three types of recited protein genes (*i.e.*, a universal probe which hybridizes to all three interferon-affected protein genes); different probes "correspond" to only one type of a recited interferon-affected protein gene; or one probe "corresponds" to multiple interferon induced protein genes, one probe corresponds to multiple interferon regulation factor genes, and one probe "corresponds" to multiple chemokine genes. Also, it is not clear what parameters are to be assessed and to what degree, in order to determine a "correspondence." As the intended limitation is not clear, claims 1-3 are indefinite.

Claim 1, as amended, recites the limitation "detecting fluorescence to determine the expression levels." It is not clear whether "determining" is intended to be an active, positive

method step or merely an intended use of the method. As the intended limitation is not clear, claims 1-3 are indefinite.

Claim 1, as amended, recites the limitations an "efficacy evaluation ... of an interferon treatment" and "to evaluate the efficacy of the interferon treatment." The limitation "efficacy" of a treatment is vague and indefinite because it is not clear for what effect the potency/efficacy of the interferon is evaluated. Specifically, it is not clear whether the treatment is intended to be effective, for example, in inhibiting, ameliorating, enhancing, preventing, or treating a condition, and neither the specification nor the claims defines the limitation. As the intended limitation is not clear, claims 1-3 are indefinite.

Claim 1, as amended, recites evaluating the efficacy of a treatment based on measured gene expression and the correlation between "clinical findings" of a treatment and gene expression. It is not clear what "clinical findings" are intended and whether "clinical findings" reflect the efficacy of treatment or *are* the efficacy of treatment. As the intended limitation is not clear, claims 1-3 are indefinite.

Answer to Arguments

Claim 1 recites the limitation "to evaluate the efficacy of the interferon treatment based on ... gene expression levels and the correlation data." Claim 1 was rejected in the previous office action because it was not clear what standard, algorithm, strategy, and/or criteria is to be applied in order to "evaluate" data. Applicants argued that the efficacy of the interferon treatment is evaluated by statistically analyzing variation in gene expression using a specific gene cluster disclosed in the instant invention as a marker (p. 16, lines 15-20). Applicants' arguments have been considered, but are found not persuasive.

In response to the argument that the specification discloses evaluating by statistical analyzing variation in gene expression using a specific gene cluster disclosed in the instant invention as a marker, it is noted that the process steps that applicants rely upon are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). It is not sufficient for applicants to claim a method of an efficacy evaluation but fail to set forth, clearly, deliberately and precisely the essential steps by which the efficacy is evaluated. In the absence of such steps, the skilled artisan is not reasonably apprised of the scope of the claims. Though some or all of the evaluation steps may appear in the specification, it is the claims that must be able to stand alone in definitely reciting the invention fully, clearly and precisely. Because the claims only recite a method of an efficacy evaluation with no steps by which the efficacy is evaluated, the claims are incomplete and do not define the invention for which applicants are seeking protection. The examiner maintains that the instant claims are indefinite, and therefore the rejection is also maintained.

Claim Rejections - 35 USC § 103

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp US 2003/0104393, in view of Veer, *Genomics*, 54:267-277 (1998), and further in view of Satoh, *Neurology*, 57:681-685 (2001).

Claim 1 was rejected over Sharp, Veer, and Satoh in the previous office action. Applicants argue that neither Sharp, nor Veer, nor Satoh teach a *marker* for analysis of the

efficacy of the interferon treatment against *multiple sclerosis* using *peripheral blood leukocytes* of a patient. Applicants' arguments have been considered, but are found not persuasive.

Applicants are reminded that the rejection is made under 35 U.S.C. 103(a) over a combination of references.

With regard to multiple sclerosis and blood cells.

In response to the arguments, it is noted that Sharp does disclose assessing "injury", wherein the "injury" comprises autoimmune diseases including Multiple sclerosis (MS) [0042]-[0043]. Sharp further discloses assessing "injuries" in blood cells including red and white blood cells, lymphocytes, leukocytes, monocytes, macrophages, eosinophils, basophils and all other cells found in blood [0044].

It is further noted that Satoh discloses that IFN-β is effective in treating MS (abstract and p. 682, left col, top paragraph). In addition to disclosing an induction of IRF-7 (an interferon regulation factor gene) in IFN-β-treated astrocytes, Satoh further discloses that mRNA encoding IRF-7 is expressed in the spleen, lymph nodes, thymus, and peripheral blood lymphocytes, wherein it is induced by exposure to various factors. (p. 864, left col., top paragraph). Satoh also discloses that IRF-7 mRNA expression is markedly elevated in human lymphoid cell lines (p. 864, left col., top paragraph

In addition, it is noted that a blood cell type from which mRNA is derived does not limit the method steps, *e.g.*, a step of labeling mRNA with a dye is not limited by the type of cells from which mRNA is derived.

With regard to a marker gene.

It is noted that the instant claims do not recite a marker gene for analysis of the efficacy of the interferon treatment, but only recites hybridizing with probes corresponding to an interferon induced protein gene, regulation factor gene, and chemokine gene.

For the reasons stated above and in the previous office action, the examiner maintains that Sharp, Veer, and Satoh make a method of the evaluation efficacy of the interferon treatment obvious, and therefore the rejection is also maintained.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp US 2003/0104393, in view of Veer, *Genomics*, 54:267-277 (1998), in view of Satoh, *Neurology*, 57:681-685 (2001), as applied to claim 1 above, and further in view of Nomiyama, *J. Interferon and Cytokine Res.*, 19(3):227-234 (1999).

Claim 2 was rejected over Sharp, Veer, Satoh, and Nomiyama in the previous office action. Applicants argue that neither reference discloses a marker for analysis of the efficacy of the interferon treatment against multiple sclerosis using peripheral blood leukocytes of a patient. Applicants' arguments have been considered, but are found not persuasive.

Applicants are reminded that the rejection is made under 35 U.S.C. 103(a) over a combination of references.

Applicants did not specifically address the rejection over the combination of references. The examiner maintains that Sharp, Veer, and Satoh make claim 1 obvious, and therefore also maintains the instant rejection.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharp US 2003/0104393, in view of Veer, *Genomics*, 54:267-277 (1998), in view of Satoh, *Neurology*, 57:681-685 (2001), in view of Nomiyama, *J. Interferon and Cytokine Res.*, 19(3):227-234 (1999), as applied to claims 1-2 above, and further in view of Seeger, *Blood*, 96(11, Part 2):167b (16 Nov., 2000), and in view of Geng, *Genes*, Chromosomes & Cancer, 26:70-79 (1999).

Claim 3 was rejected over Sharp, Veer, Satoh, Nomiyama, Seeger, and Geng in the previous office action. Applicants did not specifically address the rejection over the combination of references. The examiner maintains that Sharp, Veer, and Satoh make claim 1 obvious, and therefore also maintains the instant rejection.

Conclusion

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marina Miller whose telephone number is (571)272-6101. The examiner can normally be reached on 8-6, M-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang, Ph. D. can be reached on (571)272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marina Miller
Examiner
Art Unit 1631

MARJORIE A. MORAN
PRIMARY EXAMINER

MM

12/2/06